

Clinical Section

Hydatid Cyst of the Lung

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The recent encounter with a patient with hydatid disease of the chest prompted this brief survey of the incidence of hydatid disease among the records of the Winnipeg General Hospital and a consideration of the subject.

The records of the General Hospital reveal that since 1923 thirty-five cases have been diagnosed. The great majority of these patients had migrated to this country from Iceland. Twenty-seven of these cases had hydatid cysts in the liver, while in only one were the structures of the chest involved. Here a cyst in the liver had ruptured through the diaphragm.

Generally, next to the liver, the lung is the commonest organ to be invaded by *Taenia echinococcus*. Various statistics place the percentage of involvement of the lung between 4.5 and 20 per cent of all cases. To indicate the relative rarity of the condition in the United States and Canada, Haight and Alexander¹ in 1940 were only able to find 46 cases of pulmonary and the more infrequent pleural echinococcus cysts, and of these only five were born in North America. Multiple infection throughout the body is common and multiplicity is said to exist in about 40 per cent of cases.

Phillips² states that the symptoms of pulmonary hydatid disease depend upon the state of the cyst. Dyspnoea may result as the enlarging cyst reduces the tissue available for respiratory exchange. Cough is said to be the commonest symptom and depends upon irritation of a bronchus. Hemoptysis is rarely absent and in one large series was present in 100 per cent of cases. It results from erosion of a blood vessel and haemorrhage into a bronchus. Pain is present to some degree when the pleura is involved. Should the cyst rupture, its contents are discharged into the bronchial tree, causing a productive cough and even the presence of daughter cysts in the sputum. Again the cyst may discharge into the pleural cavity and a condition similar to an empyema may develop.

Although in countries where this condition is met relatively frequently, and the diagnosis is made in a large percentage of cases, the true nature of the process is often undetermined until at operation some special characteristic of the cyst is recognized. In addition to the symptoms aforementioned the use of roentgen studies in diagnosis is of utmost value. It is said that the concise margin of the cyst, together with the frequent presence of calcium, makes its appearance one not likely to be confused with

other pathologic conditions. The diagnosis may be confirmed by the intradermal skin reaction of Casoni and the complement fixation test. Eosinophilia may be present but does not occur frequently enough to be of sufficient value in differential diagnosis.

Report of Case

A sixty-three-year-old farmer, born in Iceland, was seen at the office August 8th, 1941. He complained of cough of three months duration, weakness, loss of appetite, and weight. Prior to his present illness the patient had always been well except for typhoid fever at the age of twenty-four. He had married twice and had ten children.

The patient appeared very ill and his history was obtained with some difficulty. The cough had begun during the spring and for a time he had raised a little sputum. More recently the cough had been non-productive. During the summer he had undergone a medical examination when a chest plate was taken. He was told, he thought, that he was suffering from "bronchitis", or it may be "bronchiectasis". The cough was not severe but caused pain in the right chest. No hemoptysis had been noted. The appetite had progressively deteriorated until he was able to take water and milk only. He had lost about 20 pounds in weight. He had become so weak he had been confined to bed for three weeks prior to examination.

At physical examination marked dullness to percussion and loss of breath sounds could be determined over the lower two-thirds of the right side of the chest. A large mass was palpable in the right upper quadrant of the abdomen and in the epigastrium, which appeared to be associated with the liver.

The urinalysis was essentially negative. The hemoglobin was 11.4 grams per 100 c.c.'s of blood and the red blood cells numbered 4,150,000. The leucocyte count was 21,300, and the differential was normal except for the presence of four percent eosinophiles. The Wasserman was negative. The roentgenogram of the chest revealed a homogeneous density in the right lower chest. In the upper portion of this density there was a translucent area with a fluid level. The right diaphragm was slightly elevated with some movement on respiration. The roentgen ray diagnosis was a septic process in the right chest, associated with some effusion. Fig. 1.

The patient was hospitalized for further investigation. His temperature ranged as high as 104° daily and was of a septic type.

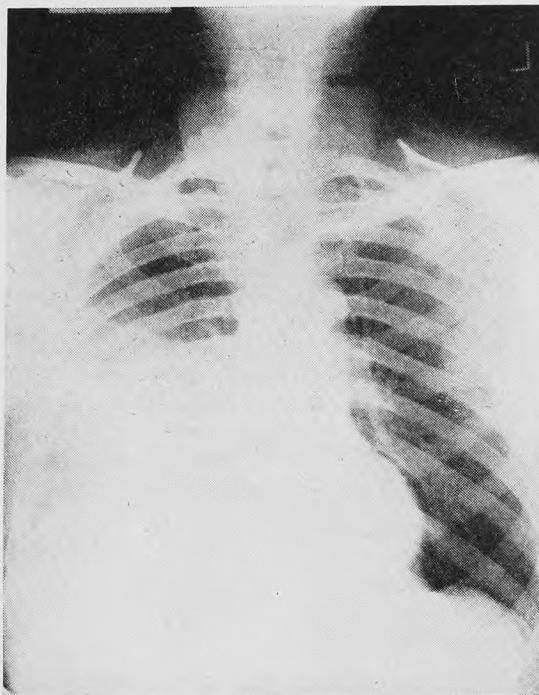


Fig. 1.—August 10, 1941. Homogeneous density in the right lower chest. The fluid level does not show in the illustration.

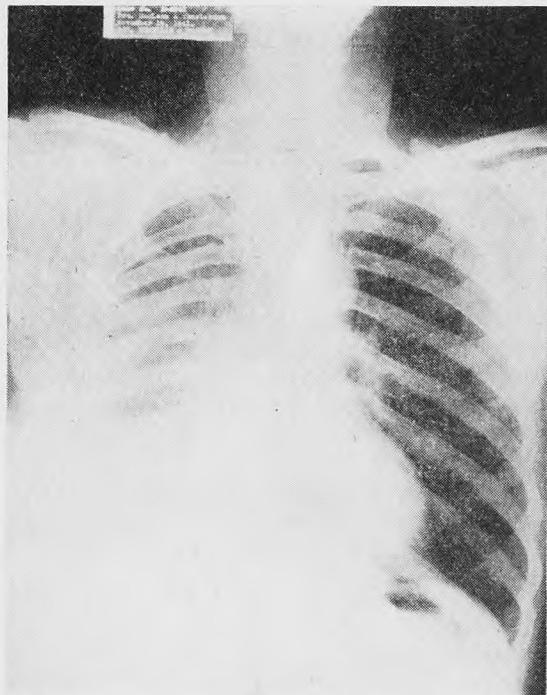


Fig. 2.—November 10, 1941. Elevation of right diaphragm. Pleural thickening and increased peribronchial markings in the lower half of the right lung.

On August the 12th an effort was made to aspirate the effusion in the right chest but only a few c.c.'s were obtained. Grossly the material was thick and resembled pus. Two days later another attempt to remove fluid was also unsatisfactory as the tenacious material plugged the needle. The pathologist's report was that the aspirated substance was purulent exudate. No tumor cells were seen and no growth was obtained from the culture.

At this stage the patient's condition was becoming critical and open drainage of what appeared to be a thick pleural purulent exudate was deemed necessary. Accordingly, on August the 18th under local anaesthesia, a segment of the right tenth rib was resected and the underlying pleura was opened. This permitted the evacuation of a large quantity of foul smelling pus and innumerable thin-walled cysts of varying size. A large cavity was then seen which appeared to be lined by the diaphragmatic and visceral pleura. Calcium deposits in these lining structures could be observed and felt. The operation had to be terminated because of a paroxysm of severe coughing by the patient. The cavity was packed with vaseline gauze and the wound left open.

The pathologist reported the material from the chest to be hydatid cysts measuring 1 - 4 cm. in diameter, containing daughter cysts.

At the first dressing, forty-eight hours post-operatively, a broncho-pleural fistula was noted. A long convalescence ensued which resulted in the spontaneous closure of the broncho-pleural

fistula and the gradual healing of the thoracotomy wound. During this time it was possible to remove many pieces of calcified plaque from the wall of the cavity. Eventually the patient became fever free, his appetite and weight were restored, and his general condition on dismissal was satisfactory. Prior to this the mass in the upper abdomen, which was no doubt due to the downward displacement of the liver, was no longer palpable. A roentgen ray of the chest at the time of dismissal revealed the right diaphragm to be elevated and there was some pleural thickening and increased peribronchial markings in the lower half of the right lung. Fig. 2. A film of the liver area presented a small circular calcified density about one cm. in diameter which was thought might be a small calcified cyst.

Conclusion:

An Icelandic patient with two hydatid lesions in the liver and chest. It is impossible to state if the condition in the chest was primarily pulmonary or pleural in origin. However, it is felt that it did not develop by direct extension from the small cyst in the liver. The presence of calcium indicates that the chest condition must have been of many years duration. It had apparently remained without production of symptoms until the cyst deteriorated and its contents invaded the pleural space proper.

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Remarks on the Diagnosis, Treatment, and Prognosis of Acute Head Injuries

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It is possible in a short paper to discuss only a few of the aspects concerning head injuries. Cranial injuries are an important part of traumatic surgery and are on the increase due largely to the increase in motor traffic. There does not seem to be any satisfactory way of preventing injuries to the head and it appears they will be always with us. For that reason, it is important to have as clear a concept as possible of the classification, the prognosis, and surgical indications with regard to cranio-cerebral injuries.

This discussion does not attempt to offer anything new in regard to the above points but rather to summarize some of the accepted views regarding these important aspects. It would appear that the medical attendant, upon seeing a head injury, should certainly be concerned with as accurate a diagnosis as possible, the immediate and future prognosis, and be familiar with the obvious surgical indications.

Classification:

Every head injury should be considered as an individual case and treated as such. There appears to be a tendency to label any head injury as "concussion," or "fracture of the skull," and these terms, loosely used, do not carry an accurate picture of the result of the trauma. Rather an attempt should be made to make as accurate a diagnosis as possible with the evidence available, in the light of our present knowledge of pathology. The terms used to classify head injuries are not all satisfactory but certain of the terms have come into accepted use and it is helpful if a clear idea of their meaning is kept in mind. No intelligent treatment can be advised or carried out in the absence of a clear-cut picture in the attendant's mind of the nature of the pathology present. In cases of trauma to the head, there are two factors to be considered:

- a. Injury to the bones of the skull;
- b. Injury to the underlying brain.

As is obvious, the injury to the brain is in all cases the important factor. A fracture of the skull is a measure of the force applied and, with the exception of compound or depressed fracture the actual fracture is not usually the most important result of the trauma. X-ray evidence of a fracture may be of considerable importance from a medico-legal point of view. With regard to compound fractures, it should be remembered that they occur in the base of the skull as well as the vault and are evidenced by the escape of blood or spinal fluid from the orifices of the skull. The complication of infection is the important thing to keep in mind.

Regarding injury to the brain itself, certain terms have come to have general use in classifying

the degree of trauma produced. The first of these is:

1. Concussion.

Concussion of the brain is a term that is commonly, but at times rather vaguely used to describe almost any head injury. Trotter has defined concussion as an injury to the head resulting in a short period of insensibility from which there is complete recovery without immediate complications or later sequelae. If this definition is to be accepted, and it appears to be, in the recent literature, the final diagnosis of concussion can only be made in retrospect after the patient has recovered. The pathology of the state of concussion is obscure but it is of importance to note that the signs are identical with primary shock, along with a short period of insensibility and a retrograde amnesia. As already stated most authorities of the recent literature tend to reserve the term of concussion for those cases that come under Trotter's definition.

2. Contusion.

The term "contusion of the brain" is applied to those cases in which there is more severe trauma to the brain and this is evidenced by the appearance of red blood cells in the cerebrospinal fluid on microscopic examination. These cases are of more serious nature than cases of concussion and the duration of the insensibility is more prolonged and is measured in hours usually rather than in minutes as in the case of concussion.

3. Laceration of the Brain.

The diagnosis of "laceration of the brain" is reserved for the most severe cases in which there is gross laceration of brain substance with the appearance of gross blood in the subarachnoid space and recovered in the cerebrospinal fluid on lumbar puncture, i.e., pink to red cerebrospinal fluid.

Laceration of the brain may occur underlying a fracture or may occur in the absence of a demonstrable fracture. At autopsy the frontal or temporal pole or both are frequently seen to be the site of gross laceration.

The three degrees of brain injury mentioned above may occur in the presence or absence of the various fractures of the vault or base of the skull. It would seem obvious then, that in many uncomplicated cases, that a fairly accurate picture of the amount of brain trauma sustained can be estimated by a diagnostic lumbar puncture at a suitable interval after the case is first seen. This information, along with the clinical findings and an X-ray of the skull, is a definite guide in the prognosis and later treatment of

the case. Thus the period of treatment in any case is directly proportional to the severity of the brain injury. Ophthalmoscopic examination of the ocular fundi does not contribute much information regarding the diagnosis or prognosis at the onset. Rawlings carried out this examination routinely on a large series of cases and finally reached this conclusion.

Prognosis:

It is usually of great importance to be able to make an immediate prognosis in any case of head injury and although one cannot be dogmatic in any case, a fairly accurate prognosis is usually possible. In most uncomplicated cases, the prognosis will depend on the classification of brain injury under which any particular case falls. Clinically this will be evidenced by the depth and duration of insensibility. A complete neurological examination is undertaken as soon as possible after seeing the case and an estimate made of the depth of unconsciousness. It is important to distinguish between the state of stupor and that of coma. In stupor, the pupils react to light, corneal reflexes are present, and the patient can be roused to some extent and registers reaction to painful stimuli and at times to his environment. In the state of coma, the pupils are fixed, corneal reflexes sluggish or absent and the patient cannot be roused. All cases that recover, no matter what type, appear to pass through a routine pattern from coma to recovery, although the phases may vary considerably in duration. The pattern is as follows: coma, stupor, delirium, confusion, or irritability, automatism, and recovery. The patient, when seen first, may be in any of these phases and if the pattern is kept in mind, the progress of the uncomplicated case can be estimated.

Of course the possibility of an immediate complication such as intracranial hemorrhage is to be kept in mind.

Symmonds, writing in 1935, has pointed out that the pattern of progress from coma to recovery seen in cases of head injury is also typically seen in a patient's recovery from an epileptic seizure. With regard to immediate prognosis of severe head injuries in which laceration of the brain is the diagnosis, Symmonds' estimates 20% of hospital cases are fatal. Symmonds also quotes a series reported by Jefferson² in 1932 in which the mortality was 23% in 1004 consecutive cases. Also Monroe³ in 1934 reported a series of 1494 cases in which the mortality was 17%. Russell⁴ states that the mortality after twenty-four hours, dropped to 8% and Monroe to 7.2%. In 1933, Jefferson reported the mortality was less than 1% after forty-eight hours. It will be seen from these figures that in any case of laceration of the brain, the majority of the fatalities occur in the first twenty-four hours and, after forty-eight hours, the chance of recovery is greatly increased. Thus, if there is prolonged coma and evidence of gross blood in the cerebrospinal fluid,

the case is generally considered to be a gross laceration of the brain and the prognosis is consequently serious. Finally, it is obvious that the cases that fall into the older age groups have a higher mortality and to a large extent this is due to the greater incidence of complications such as pneumonia.

Surgical Indications:

Surgical intervention may be immediate or may be later required for complications, and in either case, will be deliberately deferred until the patient recovers from shock. In the case of laceration of the scalp, the wound should be inspected and the underlying bone exposed if possible. Sometimes a fracture line can be seen. A probe is not so satisfactory for examination as is the gloved finger in detecting a depressed fracture. Only sterile dressings should be placed over a laceration until proper cleaning and suturing can be done. In the case of depressed fracture without scalp laceration, the patient should be put in as good condition as possible and the fracture then elevated. The depression can only be satisfactorily dealt with by means of an osteoplastic flap.

Most depressed fractures are compound and a laceration that bleeds profusely should make one suspicious of a depressed fracture. It may be worth noting that haematoma of the scalp may resemble a depressed fracture and in all cases, an X-ray is the only dependable evidence of a depression. Any compound fracture of the skull is an emergency and should be treated as soon as the patient is out of shock.

The later surgical indications arising in head injuries are signs of compression along with localizing neurological signs. The general signs of compression are well-known, namely, deepening of unconsciousness together with a slow pulse, rise in blood pressure, elevated temperature and usually slow and noisy respirations. The localizing signs may be due to cortical irritation, evidenced by Jacksonian attacks, or signs of paresis or paralysis. The paralysis may be evidenced by rigidity of the limbs on the side opposite the lesion and then flaccidity. The temperature is usually higher on the paralyzed side. There may be loss of abdominal reflexes or a plantar extensor response. With regard to pupil changes, the pupil may change from a contracted sluggish pupil to a dilated and fixed pupil on the same side as the lesion. If the X-ray has shown a fracture crossing the meningeal vessels, the possibility of extradural hemorrhage should be kept in mind. If the fracture line has involved any of the cranial air sinuses, the possibility of meningitis or even brain abscess must be considered. It is very seldom that a case is subjected to a decompression in the absence of localizing signs. The compression may be due to depressed bone, extradural hemorrhage, subdural haematoma, intracerebral hemorrhage, edema of the brain and abscess of the brain. It is not always possible to differentiate between

these conditions pre-operatively although the occasional case can be accurately diagnosed. Extradural hemorrhage presents a rapid onset of compression and there is usually a history of a variable period of insensibility followed by a more or less definite lucid interval with compression coming on in a matter of several hours. Extradural hemorrhage constitutes a very small percentage of hospital cases, possibly 2 to 3%. Acute subdural haematoma does occur and may give a similar clinical picture. Chronic subdural haematoma may occur days, weeks, or even months following the head injury and is more common and occurs most often between the ages of 40 and 60.

Intracerebral hemorrhage may occur complicating the head injury at any age, but when it occurs in association with trauma in the elderly patient, it sometimes makes the diagnosis very difficult. For instance, the intracerebral hemorrhage may have been of the spontaneous type and occurred immediately preceding the head injury and precipitated the head injury as in the case of a fall. In other cases, the intracerebral hemorrhage may occur during convalescence from a head injury. When one is doubtful whether the hemorrhage is actually intracerebral, it may be possible to exclude extradural or subdural hemorrhage by small exploratory openings. In the case of any intracranial hemorrhage following a head injury, it is more important to diagnose the occurrence of hemorrhage rather than the type as urgent surgery is required as a life-saving measure. One would like to emphasize the importance of thorough and frequent neurological examination during the observation and management of head injuries. Many cases of compression can and should be diagnosed on clinical examination alone even without the benefit of an X-ray of the skull or a lumbar puncture. Brain abscess is a later complication and if it occurs in a so-called silent area of the brain it may not present any localizing signs. In cases where one is suspicious of the development of an abscess an encephalogram should be done to confirm or exclude this possibility.

The management of the unconscious patient following head injury:

To summarize the important points in the routine management, the following factors appear important:

1. The estimation of the degrees of shock and the institution of appropriate treatment.
2. The examination of the scalp for signs of contusion and laceration keeping in mind that street accidents should have antitetanic serum. Chemotherapy is also advisable for obviously infected wounds and may be used in the form of powdered sulfanilamide.
3. Inspection of the cranial orifices of the skull for escaping blood or cerebrospinal

fluid. These should be covered externally with a sterile dressing and treated by masterly inactivity. A lumbar puncture is contra-indicated in the presence of a leak of cerebrospinal fluid. In the first place the patient is decompressing himself with loss of blood or cerebrospinal fluid or both. Secondly a lumbar puncture may conceivably favor aspiration of infected material into the sub-arachnoid space. Fortunately most such leaks stop spontaneously and only occasionally require radical treatment.

4. Question of X-ray. It should be done as soon as possible with due regard to the patient's condition. The less severe cases are often conveniently X-rayed en route to the ward.
5. Routine neurological and complete physical examination as soon as the patient's condition allows it. It should be remembered that the patient suffering from head injury may have several other injuries, notably, injuries to the cervical vertebra.
6. Determination of the degree of insensibility with regard to the progress toward recovery.
7. Decision as to the appropriate time for a lumbar puncture—the common practice is to delay this procedure for at least several hours if possible, especially if the patient is suffering from shock. This allows time for the blood, if present, to become mixed with the spinal fluid and avoids a disturbance of the already disturbed intracranial dynamics. It might be mentioned that the Queckenstedt examination should be omitted in all cases of suspected increased intracranial pressure. The need for subsequent lumbar puncture will depend on the findings and the patient's progress.
8. Routine orders for the observation of the patient is to include the following: Observation of the pulse, temperature and respirations. Rawlings⁵ in 1934, emphasized the importance of observation of the pulse and temperature as an indication of the patient's recovery from shock or the onset of collapse. Similarly the changes in pulse and temperature are an indication of the onset of compression and a guide to a case which may develop the complication of hyperthermia. After recovery from shock, orders are left to elevate the head of the bed and to apply ice caps.
9. Use of sedatives—it is probably wiser to avoid the use of morphine as it may mask some of the signs and is a respiratory depressant. Paraldehyde by rectum and sodium luminal intramuscularly are useful in the irritable stage and codein also may be used. If restraint is necessary, sideboards are advisable and in maniacal pa-

OF GENERAL INTEREST TO PHYSICIANS:

A study was recently made on more than 100 physiologically normal people. After a preliminary period of observation, ALL-BRAN was added to their diets for a period of weeks, and X-rays were made at regular intervals to trace a barium meal through the digestive tract. An after-bran observation period followed. The report is documented with illustrations, diagrams and tabulations, and leads the authors to certain important conclusions with respect to the influence of ALL-BRAN.

These studies show that bran does not change to any extent the normal sequence of events in the bowel. Bran does not accelerate optimal evacuation of the cecum, but it accelerates evacuation in those cases in which the cecal emptying time is forty-eight hours or more . . . Other evidence brought out by this study indicates with remarkable clarity that bran seems to relieve the spasms in a number of cases of (probably moderately) spastic colon. This paper is one of the reports recently appearing in scientific journals as a result of work undertaken by grants in aid to three universities by the Kellogg Company.

KELLOGG COMPANY OF CANADA, LTD.,
London, Ontario.

Kindly send, free of charge, reprint of ROENTGEN STUDY OF INTESTINAL MOTILITY AS INFLUENCED BY BRAN, by Bernard Fantus, M.D., Geza Kopstein, M.D., and Hilmar R. Schmidt, M.D., Chicago, and other published papers on this subject.

Doctor.....
Address.....

tients, the use of avertin by rectum can be resorted to.

10. Many severe cases of head injury will appear to benefit from de-hydration therapy and this can be carried out first by the limitation of intake of fluids and secondly by the administration of hypertonic solutions, either by mouth if patient is able to swallow, intravenously, or per rectum. 25% sucrose is in common use in amounts from 100 to 200 c.c. intravenously.
11. Complications such as distension of the bladder should be kept in mind and may be the cause of restlessness. The output of urine should be at least 600 c.c. in 24 hours and if acidosis is suspected, the urine should be examined for acetone and diacetic acid and the blood for nitrogen retention. In elderly patients the possibility of pneumonia should be kept in mind and stimulation of the cough reflexes may be possible by administration of carbon dioxide and oxygen and aspiration of the mucous from the throat. Chemotherapy may also be instituted.
12. With regard to Nourishment—Fluid and salt content can be provided for by the administration of glucose saline solution intravenously. A nasal tube may be passed to the stomach, and milk, cream and fruit juices, etc., administered.
13. Finally, one would like to emphasize that, in most cases, the immediate treatment is essentially along conservative lines but conservative treatment should be accompanied by careful observation and repeated examination if complications requiring urgent radical treatment are to be recognized.

Conclusion:

In this brief outline, one has attempted to stress the importance of classifying head injuries according to the degree of cerebral trauma and the bearing that this has on the immediate prognosis and routine observation and treatment. Complications requiring surgical intervention have been briefly discussed.

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Editorials and Association Notes

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Municipal Doctors

Elsewhere in this issue is a letter by Dr. C. M. Thomas in defence of the Municipal Doctor scheme.

The Saskatchewan Medical Quarterly for December 1941 publishes long reports by Dr. J. L. Brown and Dr. J. J. Collins, the committee appointed by the College of Physicians and Surgeons of Saskatchewan, to deal with the subjects of State Medicine, Health Insurance and hiring Municipal Doctors.

They reported that when private practice is no longer feasible, a Health Insurance Scheme controlled by physicians, like "Medical Service Incorporated" in Regina, is suitable for urban areas, while for rural localities the Municipal Medical Scheme is preferred. The Municipal Medical System now covers one-third of the province. The districts are satisfied with the system, and with some qualifications, the Municipal Doctors are also satisfied. The average Municipal Doctor received \$3,711.00 from his contract work, with an additional \$1,591.00 from private practice. The cost per capita per year for the contract service of general medicine, minor surgery and obstetrics was \$2.00.

The chief source of complaint was the inability of some municipalities to pay the contract salary. Another complaint was the continuous duty. It is suggested that for the future the Municipal Doctor should not contract to give service on Sundays, legal holidays and on five extra days for medical meetings. Any work done on these holidays must be arranged for on the basis of private practice.

It is suggested that contracts for municipal work should have a fixed minimum amount stated. The total amount paid should be on the basis of actual work done, the fees to be 40% of the

schedule of the Saskatchewan College of Physicians and Surgeons, with the exception of major surgery, where the fee is to be 25% of the schedule.

As a deterrent to useless calls it is recommended that the municipality collect a mileage fee for the doctor from the patient, with a higher mileage fee in winter.

Regulation of the system and attention to complaints should be managed by a government Health Service Board of five members, containing two doctors appointed by the Saskatchewan College of Physicians and Surgeons.

Manitoba Regulations

Dr. F. W. Jackson, Deputy Minister of Health for Manitoba, states that all Municipal Doctor contracts in Manitoba must be approved by the Minister of Health, and must provide a minimum salary of \$3,500. The total salary is based on the number of townships and the number of the population. Two weeks holiday are allowed yearly, as well as time to attend the district medical societies and the Manitoba Medical Association annual meeting. Every other year an additional two weeks holiday is provided for refresher courses. The Doctor is allowed to collect two dollars from a patient if he feels a call was unnecessary. A district wishing to have a municipal doctor must first vote in favor of this step, and then take a second ballot as to whether the doctor then practicing in that locality should be given the appointment. Complaints are handled by a committee consisting of a representative of the district medical society, a municipal councillor, and a representative of the Department of Health.

There are now seventeen municipal doctors in Manitoba.

Dr. R. G. Ferguson to Lecture

Dr. R. G. Ferguson, of Fort San, Sask., has been asked to give the David A. Stewart Memorial Lecture this year. It will be delivered in Theatre A, Medical College, at 10 a.m. on Wednesday, February 11th.

Doctor Mathers and Col. Archibald to Speak on February 27th

At a meeting sponsored by the Royal College of Physicians and Surgeons of Canada on February 27th at 8 p.m. in Theatre "B" of the University of Manitoba, Dr. A. T. Mathers, President of the Royal College, will speak on

"Recent Advances in Medicine:
Psychoneuroses in War Time."

Col. Edward Archibald will speak on

"Recent Advances in Surgery:
The Treatment of War Wounds."

All members of the Medical Profession are invited to attend.

Letter to the Editor re Municipal Doctors

The Editor,
Manitoba Medical Review,
Winnipeg, Manitoba.

Dear Sir:

A brother practitioner suggested that it might be of general interest for me to state my personal views of the municipal doctor system. Many criticisms have been directed at it, some fairly and others not so fairly. No one feels the system is perfect, but in time no doubt some of the contentious features will be remedied to everyone's satisfaction. I feel that fundamentally it is sound and practicable.

This letter is an effort to refute some of the statements I have heard and some that I have read. A letter in the June 1941 issue of the Canadian Medical Association Journal is freshest in my mind, so I will deal more specifically with statements from it. The scheme was classed as "haphazard" . . . the "official sanction of the medical profession had not been conferred upon it." . . . it was claimed that the medical man was subject to the dictates of uninformed rural councils . . . that the supervision of all municipal contracts by the Minister of Public Health was inadequate . . . and that the type of medical care rendered was inadequate . . . "in most instances all the patient is entitled to is maternity services, office visits, house calls, extraction of teeth, and not minor, but minimal surgery. To this must be added inoculations and vaccinations . . . Should the patient require major surgery, specialists or X-ray or hospitalization he is called upon to pay for it as he may, assuming in many instances an overwhelming financial burden." Municipal doctors, too, are accused of referring indigent cases to neighboring private practitioners because they cannot pay.

I have been a municipal doctor for six years and also for a short time practiced privately. I have been in both Saskatchewan and Manitoba too. Therefore, I feel as well qualified as the average to speak on the subject. For those who wish to read the opinions of men who have studied the question more deeply than I, I would recommend the article of Dr. R. O. Davidson published in the C.M.A. Journal of September 1941 or the report of a survey made in Manitoba by our own Deputy Minister of Health, Dr. F. W. Jackson. With his kind permission, I have quoted later in this article from Dr. Jackson's charts.

It seems agreed by all that the idea of municipal doctors and medical care first started in districts so sparsely settled that no doctor could make an adequate living among them in private practice. Everyone seems willing to admit too, that in these districts the system served and is serving a useful purpose. In fact, it was not until the idea had spread to surrounding areas and was encroaching on the domain of the private practitioners, that unfavorable comment began. Much of this unfavorable comment was not merited, I contend, and will endeavor to elaborate that statement.

Is the scheme one which was planned in a haphazard fashion? I suggest that the results obtained in districts at present so served, prove the reverse to have been the case. I have known many municipal doctors and known of many municipal services. In minor items each might differ from the other, but essentially all were alike. I cannot remember any district, once the municipal system was inaugurated, ever voluntarily going back to the old system. In one instance where they did do so, it was because they could not get any doctor whose qualifications fitted him for the task . . . in another they did so because the first doctor that was accepted turned out to be a worthless, drunken chap who really should have been dismissed from the profession. Very definite standards are set for the type of service rendered and I can personally assure you that if one's work did not produce results at least on a par with what is accepted as average, the ratepayers would not be long in making it known to the doctor. Also, the remuneration of the doctor and the cost to the people is fixed. Both seem satisfied as far as I am aware. As to adequate supervision by the Department of Health, I know from per-

sonal experience of this. When I returned from post-graduate studies in 1938, I was very anxious to get an immediate source of income. So much so, that I was willing to accept fewer concessions than were my due. The Department was so very outspoken in looking after my interests in spite of myself, so to speak, that I am afraid I temporarily resented their efforts.

Allegedly we are not sanctioned by the medical profession. One must perforce conclude that the writer classes us as being only slightly better than "quacks," which is absolutely unfair. So far as our present system of education allows we are as well qualified to practice as any other graduate of accredited medical schools. To my knowledge, no municipal doctor has ever been accused of performing operations needlessly or of committing any other unethical procedures. Our only guilt is that we market our skill in a different manner than has been the custom heretofore. But that surely should not cause such animosity. I feel it is unfair for members of the profession to set themselves up as our judges until they have at least given the matter due consideration. Otherwise they must admit to intolerance and one does not like to associate the members of the medical profession with such a fault.

The most important feature to decide is whether or not the type of medical service being rendered is on a par with the type received under the earlier system of private practicing physicians. We are reproached because we do not provide specialist's services, X-ray facilities, hospitalization, etc. By inference, we conclude that if the system did include such services it would be acceptable. Surely, then, it is logical to conclude that the municipal doctor scheme is at least a step in the right direction. Moreover, I cannot credit the corollary to that statement which would indicate that the average general practitioner DID provide these services. If we are fair the municipal doctor should be considered in respect to his abilities as compared with the ordinary general practitioner. Some figures from Dr. Jackson's morbidity survey shed interesting light on this very question. For two years seven municipal doctor areas were closely surveyed as to number of calls, type of cases, mileage, days disability in hospital, or home, etc., etc.

Some of the conclusions which were drawn are as follows:

"Whereas the average hospitalization required over the whole of the population of Manitoba is 1.5 days per person per year, the average in these municipal doctor areas is only .5 days per person per year.

"Likewise, the number of days of disability is lower, being only two days per person per year as against the five days per person per year which is generally accepted as the average for the whole Dominion.

"In respect to maternal and infant mortality figures, it was found that these too compared favorably with the rest of the province. In fact, had it not been for a fortuitous circumstance they would have been even better than they were. However, on the record the figures showed an infant mortality of 40.1 as compared with the provincial figure of 51.8 and the maternal mortality was 0 as against 3.4 for the province."

Another interesting picture was drawn from the figures of cost of medical services to the people. For the seven areas under the survey as follows:

	per person
	per year
Doctor's services	\$ 1.77
Specialists' services	1.57
Hospitalization	1.42
Total cost	\$ 4.76

In contrast to these figures, the services as listed in the various districts were assessed at the scheduled rate of fees as paid by the Workmen's Compensation Board. The same services that the municipal doctor provided for an average cost of \$4.76 per person per year would have cost the people \$6.25 per person per year at their rate of charges. This is approximately an index of the costs levied by general practitioners generally.

As to the type of services rendered, I can only quote with authority from my own practice in the municipality of Daly and the Town of Rivers. Under my contract

all residents are entitled to consult me as often as I think necessary and as many times in excess of this as the patient himself wishes. If they are too sick to come to the office, or injured, I am expected to visit them at their residences as frequently as the case demands. I provide my own transportation, winter and summer. An average amount of laboratory procedures are performed, such as blood counts, blood smears, urinalyses, Mantoux tests, sedimentation rates, urethral or vaginal smears or other smears of discharges, stool examinations for parasites or occult blood, gastric analyses, blood samples for Wassermanns, blood sugars, throat swabs for diphtheria, Friedman tests, agglutination for Brucellosis; spinal fluid is examined for cells and globulin by myself, and if desired they are sent on for further reactions.

So far as surgery is concerned, I have always advocated against "kitchen surgery." With transportation no longer a problem, I think one subjects patients to more risk by operating in the home than they would take by being moved to hospital. However, we do tonsils and adenoids in the home or office, all the common fracture work, amputation of digits, removal of growths from the skin and electro-cauterization of dirty services. I have a fairly large series behind me of various traumatic surgical cases successfully treated, injection of varicose veins or hemorrhoids, etc., etc.

Patients have the privilege of coming to me for refractions if they wish, or they can go elsewhere; if they need glasses they have to pay for them. My office is equipped to do any diagnostic roentgenological examination necessary. If the plates require the opinion of a radiologist, the people are expected to pay him for his opinion. They might even have to go to Brandon or Winnipeg for more careful plates.

They have complete choice in the matter of who shall do any major surgery. If they choose me, I am expected to do it at 75% of the usual fee. If it is a more difficult case than I wish to do then they either choose their own specialist or select from several that I recommend to them.

Every expectant mother is examined monthly for B.P., weight, urine, blood; at two examinations at least, a complete physical examination is performed and also a Wasserman is taken. Most of the primiparae have an X-ray of the pelvis taken after the head has become engaged. The majority are confined at home. If they wish they may go to hospital or if I feel it is wise, I send them there. The majority of both surgical and maternity cases are transported in my car to hospital free of charge (23 miles away).

Occasionally the privileges above stated are abused by people. I have had very few "wild goose chases" in the country calls I have made. All in all, I really believe the majority of people in this district appreciate that they have average medical attention at less than average cost. The satisfaction so far as I am concerned is mutual.

Yours truly

C. M. THOMAS.

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- Book "THE EXPECTANT MOTHER."
- Book "DEXTROSOL."

Name

Address

Municipal Doctor Agreement

*Drawn up by the Department of Health and Public Welfare
of the Province of Manitoba.*

WHEREAS the PARTY OF THE FIRST PART is desirous of engaging a duly qualified Physician and Medical Officer of Health for the following described territory:
and the terms of the AGREEMENT have been arrived at between the Parties.

NOW THEREFORE THIS AGREEMENT WITNESSETH the PARTIES hereto each agree with the other as follows:

1. The PARTY OF THE SECOND PART agrees with the PARTY OF THE FIRST PART to enter into the employment of the PARTY OF THE FIRST PART and

- (a) To reside within the territorial limits of the area above described;
- (b) To give medical care, attention and treatment to each and every resident of the area requiring same without cost except as provided further herein to such resident to the extent that such medical service and attention can be rendered within the limits of the area;
- (c) To assume and perform all the obligations of a Medical Officer of Health under "The Public Health Act" or any other act or any regulation passed thereunder or any by-laws in force within the limits of the area and to exercise all powers and perform all duties given to or required of a Medical Officer of Health;
- (d) To do all minor surgery as part of his employment without charge, but major surgery in a hospital shall be paid for by the resident requiring same;
- (e) To give and devote his whole time to the service of the parties of the first part during the whole of the term of his employment and not to practice his profession outside of the said area or to devote any of his time to patients residing outside of the said area who may come to him for medical care, attention or treatment except in cases of emergency and then only until the patient residing outside of the said area can be taken care of by another physician. Provided that if any resident require the service of the party of the second part as Municipal physician while he is engaged in such emergency work and by reason thereof it becomes necessary for such resident to call in another physician and he does so, the parties of the first part may pay any expense thus incurred and deduct such expenses from the salary of the party of the second part.

2. In consideration of the foregoing and upon the performance thereof, the PARTY OF THE FIRST PART agrees to pay to the PARTY OF THE SECOND PART a salary of per annum, payable in equal monthly instalments on the last day of each and every month during each year of such employment, the said salary to include all expenses of the PARTY OF THE SECOND PART as Municipal Physician and Medical Officer of Health in connection with the performance of his professional services, except that the PARTY OF THE SECOND PART shall have the right to charge any resident for drugs, dressings, supplies and furnish such to resident at rates that are reasonable and current therefor.

3. The employment of the PARTY OF THE SECOND PART shall continue until rescinded under this Agreement and either PARTY to this Agreement shall have the right to terminate the employment by giving to the other three months' notice in writing to that effect at

any time or this Agreement may be terminated by the PARTY OF THE FIRST PART for non-performance of duties of the PARTY OF THE SECOND PART by giving to the PARTY OF THE SECOND PART one months' notice;

4. If the PARTY OF THE SECOND PART has reason to believe that this contract is being terminated without just cause, he will have a right to demand a hearing before a Board of Appeal composed of one member appointed by the Municipal Commissioner or his Deputy, one member appointed by the Manitoba Medical Association and a third member chosen by the Department of Health and Public Welfare. The decision of this Board shall be final and binding on both parties;

5. In case any dispute arises of any kind between the PARTY OF THE SECOND PART as Municipal Physician and any resident of the area, such dispute may be referred to a Committee consisting of the President of the local district Medical Society, the Councillor of the Township where the dispute arose and one other member appointed by the Department of Health and Public Welfare, who shall hear and determine such dispute and its decision thereon shall be binding on the PARTY OF THE SECOND PART and the resident;

6. The PARTY OF THE SECOND PART shall be entitled to two weeks' holidays with pay in each year and he shall also be entitled to take time from his employment to attend local district medical society meetings, the annual meeting of the Medical Association and the annual meeting of the Medical Officers of Health, if and when called by the Minister of Health and Public Welfare, and no deduction shall be made in his salary by reason of such attendance.

7. Every second year of his employment, the PARTY OF THE SECOND PART may, with the approval of the PARTY OF THE FIRST PART have the right to attend for two weeks, without loss of pay, some institution of medical training for the purpose of engaging in post-graduate work;

8. This contract unless otherwise terminated, shall remain in force as long as the Municipal Physician By-law is in operation with the PARTY OF THE FIRST PART;

9. The terms of this contract may be altered or added to at any time during the currency thereof, but only by written consent of the PARTY OF THE SECOND PART; by resolution of the PARTY OF THE FIRST PART; and with the written consent of the Minister;

10. The PARTY OF THE SECOND PART may charge as against the patient only a fee of TWO DOLLARS (\$2.00) except for relief cases, which fee shall be only One Dollar (\$1.00) for the first call or visit made at a patient's home when such call was unnecessary;

11. The PARTY OF THE SECOND PART may charge for the extraction of teeth as against the patient only a fee of ONE DOLLAR (\$1.00) to adults, and from FIFTY CENTS (.50c) to ONE DOLLAR (\$1.00) to children per tooth extracted;

12. For the purposes of this contract:

- (a) "resident" shall mean any person who works in or has his usual place of abode within the limits of the area;
- (b) "Medical care" shall include obstetrical care;
- (c) "Minor surgery" shall include removal of tonsils and adenoids and the setting and treating of fractures;
- (d) "Emergency" shall mean any case in which lack of immediate medical attention might seriously endanger a person's life or future health.

13. This AGREEMENT shall be deemed to be in effect as on, from and after the day of A.D. 19 ... and until such time as it is terminated under the terms of said contract.

IN TESTIMONY WHEREOF the PARTY OF THE FIRST PART has hereunto affixed its corporate seal, attested by the proper officers in that behalf and the PARTY OF THE SECOND PART has hereunto set his hand and seal the day and year first above mentioned.

Winnipeg Medical Society

J. C. Hossack — President

C. B. Stewart — Vice-President

MEETINGS

Third Friday, each month

Digby Wheeler — Past President

F. G. McGuinness — Past President

H. F. Cameron — Secretary

David Swartz — Treasurer

Next Meetings

February 13th and 27th

MEETINGS

Start exactly at 8:15 p.m.

NOTICE BOARD

Sometimes members say to us, "Your programmes so far have been good, but can you keep it up?" No one need have any fear on that score—all the programmes will be good. For example, here is the February "bill-of-fare" as it stands at the moment. On the 13th the Society will be addressed by Dr. C. J. Watson of Minneapolis and by Dr. W. F. Gillespie of Edmonton. On the 27th we shall have Dr. Chas. Hunter, Dr. Alex Gibson and Dr. N. J. MacLean.

Dr. Watson is Associate Professor of Medicine in the University of Minnesota Medical School. He will be here to take part in the Post-Graduate Course and will speak to us on "Some Physiological and Clinical Aspects of Jaundice." Dr. Gillespie is Professor of Surgery in the University of Alberta and is also taking part in the Post-Graduate Course. His topic will be "Physiological Principles in the Repair of Inguinal Hernia." Both of these visitors are eloquent, interesting, and authoritative and will be well worth hearing.

It is not necessary to introduce the three speakers on the 27th. It is a long time since any one of them took part in one of our meetings, but they will, for that reason, be all the more welcome. Besides their topics are certainly "topical." Here is their programme:

"Injuries About the Ankle."

—Dr. A. Gibson.

"Some Common Errors in Medical Practice."

—Dr. Chas. Hunter.

"Some Errors in Surgery."

—Dr. N. J. MacLean.

There is, however, a chance that this meeting will be altered, such as to time and speaker. It is possible that we may be able to get Dr. R. Wilder of the Mayo Clinic to speak to us, and if we can, we will. When, where and on what topic he will talk, we do not yet know. In such an event, Drs. Hunter, Gibson and MacLean will speak in March.

◆ ◆

The applications of 83 candidates have been accepted during this session, and now with 339 members the Society is larger than ever before. Over 90% of the local profession is now enrolled. Sometimes we hear a pessimist suggest that this high percentage will only be temporary. There is no reason why it should be. We did not seek to increase the number of members merely

to establish a transitory record. Our purpose was to give to the Society all the strength that numbers can give it. As individuals and as a profession, we need strong societies that will assure to us the power of controlling our own interests and affairs. We need not only a cultural union but one that will concern itself with the economic difficulties of its members. A society that is ready to place its strength at the disposal of its members runs no risk of becoming weak. The Society needs everyone eligible for membership and the individual practitioner needs the Society.

Apart from this, there are two things essential in the keeping up of membership. One is good programmes. Good meetings ensure enthusiastic and maintained membership. Incidentally the assurance of a large audience spurs the speakers to put forth their best efforts. The second essential is an active treasurer. Everyone wants what he has paid for, and paid up members are good members. By prodding them into keeping paid up, the members have no back dues to worry about and so tend to remain in good standing. Dr. Swartz has been an extraordinary good prodger. Under 40 members are still in our debt and I ask these to reduce that number. With a little co-operation from them, we can look forward to a Treasurer's Report in which he will say that there are no fees outstanding. That is an attractive prospect—let us realize it.

Red Cross Receives Surgical Instruments

January 22nd, 1942.

Manitoba Medical Association,
102 Medical Arts Building,
Winnipeg.

Dear Sirs:

This will acknowledge with sincere thanks receipt of seven parcels of Surgical Instruments which are being collected by the Canadian Red Cross Society for forwarding to Great Britain. The splendid response received from members of your Association in connection with this appeal has been most gratifying and on behalf of the Manitoba Division of Red Cross I would like to express our sincere thanks.

Yours faithfully,
R. H. SNYDER, Commissioner.



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Personal Notes and Social News

Congratulations are being received by Dr. and Mrs. A. A. Keenberg of Glenboro, Man., on the birth of a son.



Major K. J. Austman recently spent a three-week leave with his family at 957 McMillan Ave.



Dr. J. E. Hudson, formerly of Hamiota, Man., is now associated with the MacLean-Thorlakson clinic in Winnipeg.



Dr. J. C. Portnuff, formerly of Churchill, Man., is now located at Foam Lake, Sask.



Dr. Hans Herschman, recently of Winnipeg, is now practicing at Wawanesa, Man.



Dr. George Fletcher has moved to Victoria, B.C., where he will practice in future.



Dr. Frank Peavey Cameron, a graduate of the University of Manitoba, has been appointed resident surgical officer of St. John's hospital, Lewisham, London, England, and is a member of the emergency surgical staff for the British Government.



Dr. Walter Alexander just completed an eighteen-month eye, ear, nose and throat course at the New York Post Graduate Medical school and is now attached to the R.C.A.F. Manning Pool, at Toronto.



Dr. and Mrs. Emmet Dwyer of 207 Montrose St. are receiving congratulations on the birth of a daughter at St. Boniface Hospital, January 24th, 1942.



Flight-Lieutenant John Stewart McKenty and Dr. Mary Webb Rait were married on Jan. 3. Mrs. McKenty is the elder daughter of Mr. and Mrs. William McG. Rait and Flight-Lieutenant McKenty is the only son of Dr. F. D. McKenty and the late Mrs. McKenty. Flight-Lieutenant and Mrs. McKenty will reside in Swift Current, Sask.



Dr. and Mrs. Douglas Bracken are receiving congratulations on the birth of a son. Mrs. Bracken was Miss Rosemary McWilliams.



Major A. W. S. Hay, R.C.A.M.C. spent a short Christmas leave in Winnipeg.

Dr. Digby Wheeler presented a paper to the Eastern Canada Division of the Canadian Association of Radiologists at a meeting held in London, Ont., early in January.



Flying Officer Donald N. C. McIntyre, R.C.A.F., has been transferred to Winnipeg.



Dr. and Mrs. Jean Bourgouin are receiving congratulations on the birth of a daughter, Jeanne-Marie, on Jan. 11. Mrs. Bourgouin was Miss Madeline Mooney.



Dr. J. Currie McMillan and Dr. Lennox Bell have returned from short visits in the East.



Best wishes to Dr. S. L. Markovits and Dr. Molly Hendin, who were married on December 25, 1941.



Support the New Victory Loan

Attention of all medical men and women of Manitoba is drawn to the Dominion Government's new Victory Loan, the objective of which has been set at \$600,000,000.

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Department of Health and Public Welfare

"The Value of Present Day Immunological Practice in Disease Prevention"

We are publishing herewith the seventh of the essays prepared by the medical students before taking the final examination in Preventive Medicine at the Faculty of Medicine of the University of Manitoba last year. The one for this month is written by Dr. Evelyn Gamble on the subject "The Value of Present Day Immunological Practice in Disease Prevention," and reads as follows:

The environment by which human beings are surrounded offers continuous opportunities for the invasion into the body of pathogenic micro organisms, to which, sooner or later, all would succumb, were it not for certain powers of resistance, spoken of as immunity. Persons or animals are spoken of as immune, when, to quote Zinsser, "they are unaffected by an exposure or an inoculation to which the normal average individual of the same species, would ordinarily succumb". When the mechanical defences of skin and mucosa are overcome, the animal body possesses still further physiological means of defence by virtue of which the germs are disposed of, or at least prevented from elaborating their poisons.

By virtue of his species man falls heir to a natural immunity to certain diseases, and by virtue of his race, through processes of natural selection, to other diseases, which have been endemic among the race for generations. On the other hand, immunity may be an acquired attribute, obtained either through having had an attack of an infectious disease, or through being subjected to one or more of the immunological practices to be discussed in this paper.

Artificially acquired immunity may be bestowed upon an individual, broadly speaking, in one of two ways.

1. He may gain his own powers of resistance through the unaided reactions of his own tissues by means of treatment with either an attenuated form or a sublethal quantity of the infectious agent of a disease.

2. He may be given a passive immunity as a result of specific antibodies introduced, by injections of the serum of an actively immunized person or animal.

There are three main methods in use for the production of active immunity against disease. Firstly: immunization with a modified virus—which includes the oldest known and most valuable immunological practice—Jennerian vaccination, consisting of the introduction of vaccine virus into the skin with the object of inducing cowpox in order to prevent smallpox. Protection is afforded by typical twelve-day "takes" against both smallpox and cowpox. The value and importance of smallpox vaccination is shown by the fact that less than 7% will escape in a severe epidemic and that the fatality among the unvaccinated is fifty times greater than among those vaccinated at any time during their lives. Prophylactic vaccination affords the most perfect immunity we have in medicine to a communicable and fatal disease.

The principle of prophylactic treatment of rabies also consists of producing an active immunity by means of a modified virus, attenuated by various methods. These procedures save many lives by preventing rabies in persons bitten by mad dogs, but it should not be administered unless necessary as untoward results such as fatal paralysis do occur. Prophylactic immunization of dogs with the present vaccine is expensive and disappointing. Yellow fever and chickenpox are two other virus diseases for which prophylactic treatment is available. For yellow fever, the use of a mixture of live virus and immune serum is practical and effective. Vaccination with chickenpox virus in the face of an epidemic in an institution is favored by some investigators, but results are variable.

Secondly, active immunization may be achieved by the use of detoxified bacterial products known as toxoids. This method is used for diphtheria, tetanus and staphylococcal infections. Before diphtheria toxoid is given, immunity against the disease, or the lack of it,

can first be demonstrated by the sensitive and reliable Schick test. The percentage of Schick-positive tests (i.e., those susceptible to diphtheria) is highest between the ages of one and five. As over 60% of deaths occur in children under 5 years of age and 80% in children under 10 years, all those from 6 months to 6 years should receive active immunization. Prophylaxis is also valuable for expectant mothers, so that natural immunity may be conferred on their children for the first 10 months of their lives. The value of alum toxoid is indisputable for after a course of injections 95% show immunity within 60 days and 99% after 7 months.

The use of tetanus toxoid for producing immunization is advantageously employed in certain groups in whom the hazard of tetanus is greater than in the general population. Staphylococcus toxoid injections increase the amount of staphylococcus antitoxin in the blood of human beings and develop an active immunity against certain types of localized staphylococcal infections. Its use differs from diphtheria and tetanus toxoid as it may be used in cases of active infections such as styes, boils, pustular acne, etc. Its greatest value is in recurrent infections.

In creating an immunity to scarlet fever, bacterial products are again used, but in this instance it is the toxin itself, although toxoids are being tried. The course of injections is mainly suitable for those especially exposed to the disease, as the number of injections is large, reactions may be severe, and the disease itself is in a mild phase at present.

Thirdly, vaccines are used for the production of active immunity, and the list is a long one. The first group includes the vaccines employed against the diseases of the respiratory tract—pertussis, tuberculosis, influenza and pneumonia. Pertussis vaccine has been used with varying success, but if prepared from recently isolated smooth strains, even although it may not give complete protection, it indisputably tempers the severity of the disease and lowers the mortality. An adequate course of pertussis vaccine gives about the same protection as an attack of the disease itself.

The value of B. C. G. vaccine in reducing morbidity or mortality of tuberculosis is not yet fully determined, but there are indications that it may produce a relative immunity for short periods. If, however, it can be depended upon to produce a fairly high immunity during childhood, its value will be immense among races highly susceptible to tuberculosis.

Vaccines for pneumococcal infections, although they are specific against the particular group in the vaccine, are not widely in use and much more work will have to be done before a statement can be made regarding their prophylactic value. As regards influenza, in Rosenau's opinion, vaccines made up of dead influenzal bacilli have no protective value whatsoever, this being consistent with the belief that a virus is the primary invader. Vaccines made of the secondary invading organisms, Pneumococci, Types I, II, III and IV, hemolytic streptococci, staphylococcus aureus, etc., may, however, help to prevent the serious complications of influenza.

The second group of vaccines includes those employed against diseases of the gastro-intestinal tract. Inducing an active immunity to typhoid fever by the subcutaneous injection of dead bacilli is a harmless, rational and effective procedure. The use of these inoculations is especially to be stressed for those using questionable water supplies, but it would be a mistake to neglect, in favor of this preventive treatment, the protection afforded by general sanitary improvements

such as good water, safe milk, fly suppression, etc. The immunity thus artificially obtained may be broken down by large doses of virulent infection. A vaccine consisting of a mixture of *B. typhosus*, *B. paratyphoid a* and *b*, is often used as a routine, but there is no decisive evidence that vaccination, with paratyphoid does afford protection, while the value of dysentery vaccines is undeniably questionable. Prophylactic vaccination against cholera is practical and useful, although it is not a necessary procedure in communities with sufficient sanitation.

Other vaccines of value are plague and typhus vaccines, and a vaccine prepared from an emulsion of ticks infected with Rocky Mountain Spotted Fever. Plague is not controlled by immunization, however, but by such measures as the suppression of rodents, and the isolation of those infected; typhus control depends upon the elimination of the body louse, and extermination of the tick remains all important in protection against spotted fever.

The value of passive immunization lies not in the protection of large numbers of people against various diseases, but in building up, for a short period, the resistance of selected cases which are known to have suffered the hazards of exposure to disease. Passive immunization is practically applicable, chiefly against diseases caused by bacteria which produce powerful toxins.

The sera of animals actively immunized against such toxins are called antitoxic sera and are used both prophylactically and therapeutically. Diphtheria, Scarlet Fever and Tetanus antitoxins are all used widely with success. Passive immunity to Diphtheria by antitoxin injection is prompt and may be used for protective purposes in the case of a young child who has been exposed to Diphtheria to tide it over the incubation period. After the danger is passed and passive immunity has worn off, the child should be actively immunized with vaccine.

Tetanus antitoxin is of more practical value than the vaccine, and should be employed as a preventive in all those cases where there is danger of tetanus infection. It is a specific and trustworthy agent, but is more valuable if given before the advent of symptoms. Scarlet fever antitoxin has a limited use but if administered to susceptible contacts, it will hasten the end of an epidemic.

Finally, we have immune sera as protective weapons against disease, the most commonly employed being for measles and poliomyelitis. Although measles itself is a comparatively innocuous disease, perhaps more than any other infection, it tends to lower resistance. Therefore the use of convalescent serum obtained between the 10th and 30th day, is to be strongly recommended, as it will give protection against the disease if given before the fifth day after exposure, or will modify the disease if given after the fifth day. In poliomyelitis also, convalescent serum or whole blood for prophylactic passive immunization of children exposed to the disease, has been found to be of value.

COMMUNICABLE DISEASE REPORT

December, 1941

Chickenpox: Total 363—Winnipeg 153, Unorganized 43, St. Boniface City 36, Brandon City 24, Woodlands 15, Flin Flon 14, Kildonan East 11, Daly 9, Kildonan West 7, La Broquerie 6, Ste. Rose Village 4, Pilot Mound Village 3, St. Vital 2, Tuxedo Town 2, Brenda 1, Brooklands Village 1, Fort Garry 1, Lac du Bonnet 1, Rockwood 1, Stonewall Town 1, St. James 1, Tache 1, Wallace 1, Whitehead 1. (Late Reported: Flin Flon 6, Deloraine 4, Minitonas 3, Kildonan North 3, Kildonan East 2, Brandon 2, Unorganized 1, Portage la Prairie 1, Lorne 1, Winchester 1.)

Mumps: Total 218—Winnipeg 44, Brandon 42, Tuxedo 39, Kildonan West 31, Woodlands 20, The Pas 16, Brooklands 7, Fort Garry 2, Selkirk 2, Minnedosa 1, Pembina 1, Portage la Prairie 1, Sifton 1, Springfield 1, Whitewater 1. (Late Reported: The Pas 6, Flin Flon 1, Emerson 1, Kildonan West 1.)

Measles: Total 153 — Winnipeg 67, Unorganized 29, Tuxedo 24, Lansdowne 5, Brandon City 4, Daly 2, Fort Garry 2, Kildonan West 2, Rockwood 2, Rosser 2, Dauphin Town 1, Kildonan East 1, Minnedosa 1, Norfolk South 1, Portage la Prairie 1, Woodlands 1. (Late Reported: St. Francois Xavier 6, Unorganized 2.)

Influenza: Total 79—Brandon 74, Winnipeg 2, Whitewater 1. (Late Reported: Thompson 1, The Pas 1.)

Scarlet Fever: Total 78—Brandon 28, Winnipeg 19, Flin Flon 6, Portage la Prairie Rural 6, Souris Town 3, St. Boniface City 3, Grandview Rural 2, Charleswood 1, Daly 1, Dauphin Town 1, Fort Garry 1, Glenwood 1, Kildonan West 1, Portage la Prairie City 1, Tuxedo 1, Unorganized 1. (Late Reported: St. Andrews 1, Tuxedo 1.)

Tuberculosis: Total 70—Unorganized 17, Winnipeg 7, St. Boniface 5, Rhineland 4, Portage la Prairie City 3, Bifrost 2, Cartier 2, Ethelbert 2, Fort Garry 2, Montcalm 2, Portage la Prairie Rural 2, Stanley 2, Arthur 1, Blanshard 1, Brandon 1, Brokenhead 1, Cypress North 1, Dauphin Rural 1, Eriksdale 1, Hanover 1, Morris Rural 1, Morton 1, Norfolk North 1, Pembina 1, Rossburn Rural 1, Russell Rural 1, Sigmunes 1, St. Paul West 1, The Pas 1, Wallace 1, Westbourne 1, Whitemouth 1.

Whooping Cough: Total 38—Winnipeg 6, Unorganized 4, Hillsburg 2, Flin Flon 2, Dauphin Town 2, Brandon 2. (Late Reported: Unorganized 17, Flin Flon 2, Kildonan North 1.)

Diphtheria: Total 20—Winnipeg 11, Brandon 1. Ethelbert 1, Mossey River 1, Roblin Rural 1, St. Vital 1, Tuxedo 1. (Late Reported: Ethelbert 1, Roland 1, Tuxedo 1.)

Encephalitis: Total 16—Winnipeg 1. (Late Reported: Stanley 3, Dauphin 2, St. Boniface 2, Cartier 1, Kildonan East 1, Whitemouth 1, Grandview Rural 1, Rhineland 1, Rockwood 1, East St. Paul 1, Ritchot 1.)

Lobar Pneumonia: Total 15—Brandon 2, Hanover 1, Portage la Prairie 1, Ste. Rose Rural 1, Whitewater 1. (Late Reported: Whitewater 2, Dauphin 1, Dufferin 1, Emerson 1, Lac du Bonnet 1, Morris 1, Unorganized 1, Winchester 1.)

German Measles: Total 13—Brandon 7, Tuxedo 2, Carberry 1, Sifton 1, Whitehead 1. (Late Reported: Brandon 1.)

Diphtheria Carriers: Total 12—Ethelbert 9, Winnipeg 3.

Anterior Poliomyelitis: Total 7—(Late Reported: Eriksdale 1, Grandview 1, Portage la Prairie 1, Ste. Rose Rural 1, Tache 1, Transcona 1, Unorganized 1.)

Erysipelas: Total 7—Brandon 2, Winnipeg 2, Gilbert Plains Village 1, Portage la Prairie 1, Transcona 1.

Typhoid Fever: Total 6—Shellmouth 3. (Late Reported: Ritchot 1, Shellmouth 1, St. Vital 1.)

Meningococcal Meningitis: Total 4 — St. James 1, Whitewater 1, Winnipeg 1. (Late Reported: Rivers 1.)

Septic Sore Throat: Total 4—Brandon 1, Kildonan North 1, Morton 1, Whitewater 1.

Puerperal Fever: Total 2—Unorganized 1. (Late Reported: Portage la Prairie City 1.)

Trachoma: Total 1—Foxwarren Village 1.

Ophthalmia Neonatorum: Total 1—Winnipeg 1.

Bacillary Dysentery: Total 1—(Late Reported: Montcalm 1.)

Venereal Disease: Total 105—Gonorrhoea 68, Syphilis 37.

DEATHS FROM COMMUNICABLE DISEASE

November, 1941

URBAN—Cancer 45, Pneumonia Lobar 2, Pneumonia (other forms) 6, Tuberculosis 5, Syphilis 4, Lethargic Encephalitis 3, Diphtheria 1, Influenza 1, Scarlet Fever 1. Other deaths under one year 19, other deaths over 1 year 173, Stillbirths 17. Total 277.

RURAL—Cancer 25, Tuberculosis 10, Pneumonia Lobar 5, Pneumonia (other forms) 8, Lethargic Encephalitis 2, Erysipelas 1, Influenza 1, Dysentery 1, Scarlet Fever 1, Vincent's Disease 1. Other deaths under one year 16, other deaths over one year 159, Stillbirths 18. Total 248.

INDIANS—Pneumonia (other forms) 4, Tuberculosis 3, Cancer 1. Other deaths under one year 12, other deaths over one year 11, Stillbirths 1. Total 32.

DISEASES	Manitoba Dec. 3-Dec. 30	Ontario Nov. 30-Dec. 27	Saskatchewan Nov. 30-Dec. 27	Minnesota Nov. 30-Dec. 27	North Dakota Nov. 30-Dec. 27
Anterior Poliomyelitis	2	1	9	2	
Meningococcal Meningitis	3	27	2	1	1
Chickenpox	339	2054	362	1002	
Diphtheria	17	13	7	13	3
Erysipelas	7	8	6	1	
Influenza	77	75	8	6	40
Leth Encephalitis	1	1			4
Measles	145	295	195	278	396
German Measles	12	59	18		
Mumps	209	871	307		
Ophthalmia Neonatorum	1				
Puerperal Fever		1			
Scarlet Fever	76	982	94	315	50
Septic Sore Throat	4	24			
Smallpox				6	1
Trachoma	1				
Tuberculosis	70	161	58	59	26
Typhoid Fever	3	13	2		1
Typh. Para-Typhoid	1	2			
Undulant Fever		5			
Whooping Cough	18	438	15	176	28
Diphtheria Carriers	12		2		

Most of these diseases are running along rather under expectancy.

Diphtheria with 17 cases and 12 carriers is mostly a hang over from the one Municipal epidemic, mentioned in last month's Review. But it should emphasize the fact that to wipe out diphtheria, we must increase our toxoiding and re-toxoiding.

Minnesota and North Dakota, both had cases of Smallpox. We have been fortunate for the past two

years in not having any cases but vaccination must be kept up and even increased or we will, no doubt, have some.

Influenza shows a slight upward trend which may be only seasonable but from experience during the time of War and the increase in influenza last winter, we may expect more than usual this winter, if not an epidemic. We would appreciate prompt reporting of influenza cases, especially this year, in order that we may be warned. An epidemic would interfere seriously with training of armed forces and also in War time industry so we should be on guard.

Chicago Selected for 1942 Clinical Congress of American College of Surgeons

Because of the war, the thirty-second annual Clinical Congress of the American College of Surgeons will be held in Chicago, October 19 to 23, instead of in Los Angeles as originally planned. Headquarters will be at the Stevens Hotel. The twenty-fifth annual Hospital Standardization Conference sponsored by the College will be held simultaneously. The programs of both meetings will be based chiefly on wartime activities as they affect surgeons and hospital personnel in military and civilian service.

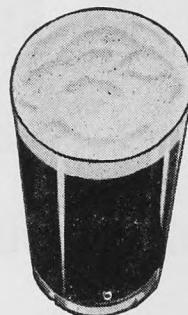
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Total carbohydrates	3.86 gm.
Reducing sugars as glucose	0.66 gm.
Protein	None
Total nitrogen	0.10 gm.
Ash	0.28 gm.
Phosphorus	38.50 mg.
Calcium	7.00 mg.
Iron	0.072 mg.
Copper	0.049 mg.
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